

## Notes on Liners and Coatings and the Lead-Free Rule

Coatings are defined in § 143.11 Definitions as:

*Coating* means a thin layer of material such as paint, epoxy, zinc galvanization, or other material usually applied by spraying or in liquid form to coat internal surfaces of pipes, fittings, or fixtures.

Liners are defined in § 143.11 Definitions as:

*Liner* means a rigid lining such as a plastic or copper sleeve that is:

- (1) Sealed with a permanent barrier to exclude lead-bearing surfaces from water contact; and
- (2) Of sufficient thickness and otherwise having physical properties necessary to prevent erosion and cracking for the expected useful life of the product.

The Definition of Lead Free and the calculation methodology with regard to coatings and liners are described in § 143.12:

(c) If a coating, as defined in § 143.11, is applied to the internal surfaces of a pipe, fitting or fixture component, the maximum lead content of both the coating and the alloy must be used to calculate the lead content of the component.

(d) If a liner, as defined in § 143.11, is manufactured into a pipe, fitting or fixture, the maximum lead content of the liner must be used to calculate the lead content of the component.

With regard to lead service lines, any product meeting the coating definition would not be allowed as a replacement mechanism as the underlying material is lead and the coating can wear away and would not be observed without extensive tap monitoring that would negate any savings from using the coating technology rather than removing the LSL. In addition, since the line is 100% lead and that value would have to be used for the lead content for the lead-free calculation, it can't be considered replaced.

With regard to a liner, the second factor is key as the liner would have to have physical properties necessary to prevent erosion and cracking for the expected useful life of the product. Since many of the LSLs are already 100 years old and lead is very durable and externally corrosion-resistant, the liner would need to demonstrate that it has physical properties necessary to prevent erosion and cracking for 100 or more years. Without such data, there is no way to conclude that it will be effective for the expected useful life of the line and could be considered replaced.

From listening session on May 5, 2021, it was indicated that the poly-ethylene liner has a 50-year expected useful life. Thus, from a cost standpoint, would need to be replaced at least once and holes dug twice. There is also a question about how effectively the failing liner could be removed and whether a new one could be effectively installed. The costs associated with removing the failing poly-ethylene liner would likely be much higher than the cleaning costs associated with the existing loose corrosion scale from the pipe surface to apply the original liner. It was also indicated that a monitoring port could be added for \$3.50. However, the sample analysis costs would again eat up any savings from not physically replacing the line.